PATENT
Docket No.: HI03027USU (P02017US)

II. IN THE CLAIMS

1. (Original) An acoustic waveguide, comprising:

a first control curve;

a second control curve;

a third control curve;

a fourth control curve; and

a continuous three-dimensional least-energy-surface coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersect a circular throat end and a non-elliptical closed control surface that defines a mouth.

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2. (Original) The acoustic waveguide of claim 1, wherein the continuous three-dimensional least-energy-surface is free of discontinuities.

3. (Original) The acoustic waveguide of claim 1, wherein the continuous three-dimensional surface further includes: a minimum surface area axial section plane of the continuous three-dimensional surface formed from the first control curve, second control curve, third control curve, and fourth control curve.

4. (Original) The acoustic waveguide of claim 3, wherein the minimum surface area axial section plane is at the circular throat end of the acoustic waveguide.

5. (Original) The acoustic waveguide of claim 1, wherein the first control curve is symmetrical about an axis with the second control curve.

6. (Original) The acoustic waveguide of claim 5, wherein the third control curve is symmetrical about the axis with the fourth control curve.

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7. (Original) A method for creation of an acoustic waveguide, comprising:

identifying a first control curve;

identifying a second control curve that mirrors the first control curve;

identifying a third control curve;

identifying a fourth control curve that mirrors the third control curve; and

generating a least-energy-surface that is formed from the first control curve, second control curve, third control curve and fourth control curve and intersect a circular throat end and a non-elliptical closed control curve forming a mouth.

8. (Original) The method of claim 7, where generating further comprises forming the least-energy-surface as a continuous surface minimizing the formation of any discontinuities.

9.-10. (Canceled)

Please add the following new claims 11 – 14 as follows:

11. (New) The acoustic waveguide of claim 3, where the minimum surface area axial section plane is disposed at a midsection of the waveguide axially between the circular throat end and the non-elliptical closed control surface.

12. (New) An acoustic waveguide, comprising:

a first control curve;

a second control curve;

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a third control curve;

a fourth control curve; and

a continuous three-dimensional least-energy-surface swept about a central axis of the waveguide with minimal discontinuities and coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersect a circular throat end and a non-elliptical closed control surface that defines a mouth.

13. (New) An acoustic waveguide, comprising:

a first control curve;

a second control curve;

a third control curve;

a fourth control curve; and

a continuous three-dimensional least-energy-surface coincident with the first control curve, the second control curve, the third control curve and the fourth control curve

that intersect a circular throat end and a non-elliptical closed control surface that defines a mouth, the least-energy-surface comprising a minimum surface area axial section plane formed from the first control curve, second control curve, third control curve, and fourth control curve, where the minimum surface area axial section plane is disposed at a midsection of the waveguide axially between the circular throat end and the non-elliptical closed control surface.

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14. (New) An acoustic waveguide, comprising:

a first control curve;

a second control curve;

a third control curve;

a fourth control curve; and

a continuous three-dimensional least-energy-surface coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersect a circular throat end and a non-elliptical closed control surface that defines a mouth, where each of the first, second, third and fourth control curves is convex relative to an axial centerline of the waveguide.